In the Matter of) GN Docket No. 12-228

Ninth Broadband Progress Notice of Inquiry)

COMMENTS of CENTRAL COAST BROADBAND CONSORTIUM

The Central Coast Broadband Consortium is a 10-year old broad-based, *ad hoc* group of local governments and agencies, economic development, education and health organizations, community groups and private businesses dedicated to improving broadband availability, access and adoption in Monterey, Santa Cruz and San Benito counties in California. We have a long history of broadband development projects implemented by our members and as a group. The CCBC Coordinating Council appreciates this opportunity to offer comments on the FCC's inquiry GN 12-228.

16. *Should we [the Commission] adopt a 100 millisecond latency threshold for our fixed-terrestrial broadband benchmark pursuant to section 706?*

We believe that 100 mS is a good threshold performance level for end-to-end round-trip latency. We note that without specifying how this is to be measured, 100 mS latency between subscriber A and a test server, and 100 mS latency between subscriber B and a test server – could result in a 200 mS round-trip time end-to-end between the users. Further, latency accumulates along a path and only a portion of end-to-end delay may be the responsibility of a serving Internet Service Provider. For purposes of Section 706, a full serving broadband connection should have a round-trip latency of less than 25 milliseconds to a regional test server. This is the network access layer latency. 50 milliseconds is then available to be allocated to Internet backbone transmission latency. Access layer latency contributions from two endpoints and from backbone transmission will provide an overall 100 mS latency within the continental U.S.

Commenting further, if a latency ceiling is a requirement for proper enjoyment of voice telephony, video conferencing and interactive games, it is a characteristic and requirement for an "advanced telecommunications capability." There is no reason to limit this requirement to *fixed-terrestrial*. If the Commission wants to offer a level of recognition to satellite-based broadband some gradation in classification should be adopted. Perhaps: *limited advanced telecommunications capability*.

31. *Fixed-Terrestrial Broadband: To what extent is overstatement [of coverage] a concern, and how can we address those concerns to get even more accurate data*?

Within our region, some fixed broadband ISPs follow engineering rules that open a new hub site when the number of subscribers exceeds 20. Other ISPs claim to be able to cover 1000 square miles from a single antenna location. ISPs track service requests for locations that are not covered and use that information for marketing research to direct their expansion into areas where they will find customers. This data is valuable to ISPs and they are incented to overstate coverage substantially to attract as many queries as possible. This overstatement colors their reports to the State Commissions. We concur with the comment posted by WISPA (Wireless Internet Service Providers Association) in this proceeding:

> "WISPA recommends that the states and their contractors, in consultation with the Commission, adopt uniform mapping criteria for the National Broadband Map. The Map should be based on a common set of predictable inputs such that the depiction of "served" and "unserved" areas is the same in all states."

In California, it appears to us that there is no State guidance to WISPs as to how or what should be submitted.

33. *Are there any other data sources or reports that would allow us to identify deployment of mobile broadband that meets the Commission's broadband benchmark?*

We have studied carrier coverage maps and we concur with the Commission that these maps overstate coverage and performance. We believe that coverage maps calculated from base station locations and antenna heights do not take obstructions such as foliage and structures into account. They also make no allowance for network congestion from other customers. These coverage maps are therefore excessively optimistic. The California PUC is undertaking an empirical performance study where achieved broadband speeds are measured at a collection of locations around the state. We believe that empirical measurements are the only method that can yield accurate and trustable results. We note that on September 5 the FCC announced the *Measuring Mobile America* program to collect exactly this kind of empirical performance data.

36. *Assuming one or more satellite providers are providing broadband that meets the Commission's speed threshold, would it be appropriate for the Commission to conclude that there are no unserved areas in America for purposes of section 706?*

Short answer: No. That broadband has been *deployed to all Americans* requires that it be accessible and therefore affordable. *Affordability* includes base subscription price and cost for broaching potential bandwidth caps. And finally, interactive real-time applications may be foreclosed to subscribers of systems with high round-trip times, giving them something less than a full *Advanced Telecommunications Capability* and therefore falling short of the Section 706 requirement. The Commission should not consider bandwidth separate from the other important characteristics of candidate services: Latency, cost and bandwidth caps in determining section 706 matters.

We believe that satellite data services can play an important role in providing *some* service to the most isolated and rural users. But it does not meet all the requirements of an advanced capability.

38. *Is broadband being deployed to residential consumers, rural communities...?*

We are concerned that some cable TV systems have not been upgraded from analog to digital and thus cannot carry data service. Several Commissioners in filed comments have applauded the industry generally for the rate at which advanced DOCSIS technologies are being deployed offering consumers ever greater speed. We urge the Commission also to track the fate of the nation's analog systems and the communities they serve. An ever-greater percentage of DOCSIS capable TV systems could be a result of system upgrades, or it could be that old systems and their subscribers are being abandoned.

42. *...we seek comment about whether a household or geographic area should be considered served by "advanced telecommunications capability" . . . if the mobile service meets the benchmark for fixed broadband service.*

The key requirement here is that broadband must be available to subscribers where they live, in their homes. It is not sufficient that they could access broadband from their driveway or sitting on the roof of their house. Our experience is that coverage within structures causes a signal reduction of between 10 and 30 dB. In new structures with heat reflective glass and good thermal insulation, signal losses are at the high end of the range. The mobile broadband industry has of yet not attempted to install small cells at a density that can overcome the challenge of losses penetration of a building's skin. We are certain that *some* subscribers located very close to cell sites will achieve broadband performance levels indoors. But they will not be in the majority.

We would be happy to hear that this is a technology problem than can be fixed with a roof-mounted antenna unit retransmitting inside the structure on a frequency reserved for that use. Perhaps this would be wi-fi. But to speculate on unannounced potential products leads us far astray from answering the question.

Households are *served* where they can access broadband at Commission designated technology independent speeds indoors where they live.